



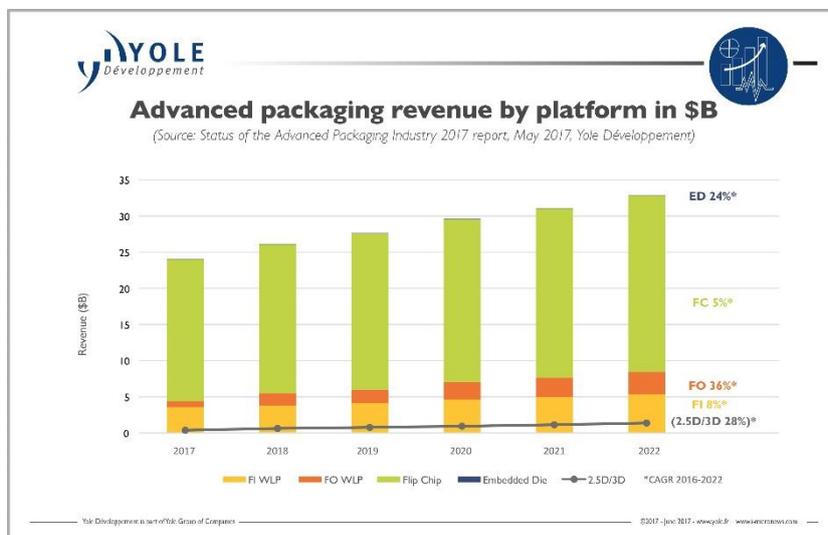
**FOR IMMEDIATE RELEASE:**

**Advanced packaging brings more value and cost reduction to future semiconductor products**

Status of the Advanced Packaging Industry 2017 report – Yole Développement

**LYON, France – June 15, 2017:** [Yole Développement \(Yole\)](#) confirms the consolidation of the advanced packaging industry, that is showing a steady growth between 2016 and 2022: +7% in revenue. “Advanced packaging is showing a total revenue CAGR<sup>1</sup> higher than the total packaging industry (3-4%), semiconductor industry (4-5%) and generally the global electronics industry (3-4%)”, comments **Andrej Ivankovic, Technology & Market Analyst at Yole**. “Companies are today managing production costs and enlarging their portfolio. In parallel, advanced packaging players are expanding their activities toward the emerging markets thanks to mergers & acquisitions...,” he adds. Therefore, the advanced packaging industry is showing drivers including IoT<sup>2</sup>, automotive industry, 5G connectivity, AR/VR<sup>3</sup>, AI<sup>4</sup>...

What are the advanced packaging market drivers and latest market dynamics? What are the emerging market segments targeted by the leaders to diversify their activities? What are the technology moves? How will the advanced packaging market affect the semiconductor industry evolution? Advanced packaging solutions could enable the development of future semiconductor products and so boost the global semiconductor industry...



Yole’s advanced packaging team releases this month its [Status of the Advanced Packaging Industry report](#). Under this 2017 edition, analysts propose an overview the industry, its disruptions and opportunities. They analyze the latest technology trends and forecasts. Yole’s team also reviews the supply chain and offers a detailed description and analysis of leading company strategies,

<sup>1</sup> CAGR : Compound Annual Growth Rate  
<sup>2</sup> IoT : Internet of Things  
<sup>3</sup> AR/VR: Augmented Reality/Virtual Reality  
<sup>4</sup> AI : Artificial Intelligence

especially the shifting business models. Yole's report includes a technical roadmap, showing an analysis per advanced packaging platform along with an analysis of future production and developments in the timeframe 2017-2022.



Andrej Ivankovic from Yole, author of this technology & market report, will present a closer look at the ASE Tech Forum @ Nijmegen. ASE's conference takes place on June 28, in Van der Valk Hotel, Nijmegen, The Netherlands. During one day, ASE invites you to explore key areas of its IC<sup>5</sup>, SiP<sup>6</sup> and MEMS<sup>7</sup> packaging portfolio, developed in alignment with emerging applications. Innovative technologies, such as FO<sup>8</sup>, FC<sup>9</sup> and 3D, will be detailed as well as opportunities of collaboration: [Full program & registration](#).

*"We are very pleased to welcome our network at the ASE Tech Forum @ Nijmegen on June 28", asserts **Jean-Marc Yannou, Technical Director at ASE Europe**. ASE is developing a unique one-day program to present our innovative portfolio and including networking times and technology demonstrations. We are looking forward to welcome the advanced packaging companies and get relevant discussions and debates".*

*"The fastest growing advanced packaging platform is FO with 36% followed by 2.5D/3D TSV with 28%", announces Andrej Ivankovic from Yole. "Therefore FO platforms and 2.5D/3D TSV solutions are expected to exceed respectively US\$3 billion and US\$ 1.3 billion by 2022."*

The FC platform is by far the largest, accounting for 81% of advanced packaging revenue with US\$19.6 billion in 2017, however a lower 5% revenue growth indicates that penetration of primarily FO packages will decrease FC market share to 74% by 2022. The revenue forecast translates to an advanced packaging wafer forecast of 8% and a 9% unit count, CAGR during the period 2016-2022. Advanced packages will continue to dominantly address high-end logic and memory in computing and telecom, with further penetration in analog and RF in high-end consumer/mobile segments, while eyeing opportunities in growing automotive and industrial segments.

The shifts in the semiconductor supply chain are results of preparations for future uncertainty, and search for other value flows. Several mergers and acquisitions have been made in attempt to offer a more complete and diversified portfolio, while keeping control of costs

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<sup>5</sup> IC: Integrated Circuit

<sup>6</sup> SiP: System-in-Package

<sup>7</sup> MEMS: Micro Electro Mechanical Systems

<sup>8</sup> FO: Fan-Out

<sup>9</sup> FC: Flip-Chip

and potential losses. Furthermore, in search of additional revenue, new business models are appearing or expanding...

A detailed description of the “Status of Advanced Packaging” report is now available on [i-micronews.com, advanced packaging reports section](https://www.i-micronews.com/advanced-packaging-reports-section).

The “More than Moore “ market research and strategy consulting company Yole, invites you to attend the ASE Tech Forum @ Nijmegen, meet advanced packaging experts and discover the status of industry with Andrej Ivankovic’s presentation including an overview of technology and market trends, a detailed analysis of the role of advanced packaging in future semiconductor applications. Andrej will also reveal the future requirements for advanced packaging in the IoT era, multi-die integration (especially SiP) and implications to technology and supply chain. End of his presentation will be dedicated to the position of the European semiconductor industry and future opportunities. [Full program & registration](#).

**About [Status of the Advanced Packaging Industry 2017 report](#):**

*How can advanced packaging decrease semiconductor market uncertainty and enable future semiconductor products? – This report has been performed by Yole Développement (Yole) part of Yole Group of Companies.*

**Companies cited in the report:**

Altera, Amkor, Analog Devices, Ardentec, Atmel, AOI Electronics, Apple, ARM, ASE, Avago, Broadcom, Carsem, China WLCSP, Chipbond, ChipMOS, Cisco, Cypress Semiconductor, Deca Technologies, Greatek, IC Interconnect, Fairchild, Facebook, Flip Chip International, Formosa, Freescale, Fujitsu, Globalfoundries, Google, Hana Micron, Huawei, Inari Berhad, Intel, Intersil, J-Devices, JCET, King Yuan, Linear Technology, LB Semicon, Lingsen Precision, Maxim, MaxLinear, MediaTek, Microchip, Microsemi, Movidius, Nantong-Fujitsu, Nanium, Nepes, Nvidia, NXP, ON Semiconductor, OptoPAC, Orient Semiconductor, Powertech Technology, Renesas, Qualcomm, Rohm, Samsung, SilTech, Sigurd, SK Hynix, Softbank, SPIL, ST Microelectronics, STATS ChipPAC, STS Semiconductor, Teraprobe, Texas Instruments, Tianshui Huatian, Tong Hsing, Toshiba, TSMC, Unisem, UTAC, Walton Advanced Engineering, and more...

**Author:**

**Andrej Ivankovic** is a Technology & Market Analyst on the Advanced Packaging and Semiconductor Manufacturing team at Yole Développement, the “More than Moore” market research and strategy consulting company. Andrej holds a master’s degree in Electrical Engineering with specialization in Industrial Electronics from the University of Zagreb, Croatia, and a PhD in Mechanical Engineering from KU Leuven, Belgium. He started at ON Semiconductor, performing reliability tests, failure analysis, and characterization of power electronics and packages. He then worked for several years as an R&D engineer at IMEC Belgium on the development of 3D IC technology, focused on electrical and thermo-mechanical issues of 3D stacking and packaging. During this time, he also worked at GLOBALFOUNDRIES as an external researcher. Andrej regularly presents at international conferences and has authored or co-authored >20 papers and one patent.

**About Yole Développement – [www.yole.fr](http://www.yole.fr)**

Founded in 1998, Yole Développement has grown to become a group of companies providing marketing, technology and strategy consulting, media and corporate finance services. With a strong focus on emerging applications using silicon and/or micro manufacturing, the Yole Développement group has expanded to include more than 50 collaborators worldwide covering MEMS, Compound Semiconductors, RF Electronics, LED, Displays, Image Sensors, Optoelectronics, Microfluidics & Medical, Advanced Packaging, Manufacturing, Nanomaterials, Power Electronics and Batteries & Energy Management.

The “More than Moore” company Yole, along with its partners System Plus Consulting, PISEO, Blumorpho and KnowMade, support industrial companies, investors and R&D organizations worldwide to help them understand markets and follow technology trends to grow their business.

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